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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,291	07/08/2003	Naganori Shirakata	2003_0941	7380

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EXAMINER	
ODLAND, DAVID E	
ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/614,291	SHIRAKATA ET AL.	
	Examiner	Art Unit	
	David Odland	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/08/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spruyt et al. (EP 0820171), hereafter referred to as Spruyt in view of Isaksson (WO 95/19671), hereafter referred to as Spruyt.

Referring to claims 1,3,5,6,8,10,12,14,15 and 17, Spruyt discloses a demodulator for receiving an signals generated from a plurality of subcarriers modulated with transmitted data (an pair of modems communicate (see figure 1)) said demodulator comprising: a Fast Fourier Transformer (FFT) operable to convert the signal into a FFT converted signal (the modem comprises an FFT (see figure 1)) which comprises data carriers and pilot carriers (the data has pilot and data carriers (see figure 1 and abstract)), a pilot carrier detector operable to detect the pilot carriers from the FFT converted signal (the pilot carrier and expected pilot carriers are detected (see abstract and figure 1 and page)), a phase difference calculator operable to calculate phase differences between each of the detected pilot carriers and each of known pilot carriers (the phase difference is measured between the received pilot and the expected pilot signals (see abstract and figure 1)), a phase change amount calculator operable to calculate, based on the calculated phase differences, an amount of change of phase rotation between each pair of adjacent pilot carriers (the PLL used the detected phase difference to calculate a phase rotation

signal (see figure 1 and abstract)) and a phase corrector operable to correct a phase of each of the data carriers, based on the calculated phase differences and the amounts of change (the rotation circuits perform the rotation of the pilot signals to correct the differences calculated by the PLL (see figure 1 and columns 6 and 7)). Spruyt does not disclose that the signals are OFDM signals and the amount of phase change is calculated with respect to carrier frequency and a sampling frequency. However, Isaksson discloses an OFDM demodulation system wherein subcarrier deviations are calculated and corrected with respect to the intermediate frequency and a sampling clock (see figure 9 and page 5)). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into the system of Spruyt because as Isaksson points out on page 3 dong so allow control of drift of the time and sampling frequency, thereby making the system more reliable by helping to ensure synchronization between end points. Note, regarding claims 5 and 14, Spruyt discloses the modulation side at the transmitter (see figure 1)).

Referring to claims 2,4,7,9,11,13,16 and 18, Spruyt discloses a data demodulator operable to demodulate the data carriers after phase correction to reproduce the transmitted data (the modem at the other end point demodulates the subcarriers are the signals are corrected (se figure 1 and abstract)).

Conclusion

3. The following prior art, which is made of record and not relied upon, is considered pertinent to applicant's disclosure:

a. U.S. Patent Number 6,662,367 to Dapper et al.

b. U.S. Patent Number 5,710,990 to Long et al.

c. U.S. Patent Number 6,304,545 to Armbruster et al

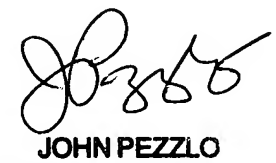
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Odland whose telephone number is (571) 272-3096. The examiner can normally be reached on Monday - Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached at (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

deo

December 6, 2004



JOHN PEZZLO
PRIMARY EXAMINER